

1 What is claimed:

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3 1. A printer system comprising a printer and an ink supply, the  
4 printer arranged to print a location pattern comprising a plurality of  
5 dots adapted to be read by a pattern reader, the system being further  
6 arranged to modify one or more characteristics of the dots  
7 substantially in dependence upon the quantity of ink in the supply.

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9 2. A system according to claim 1, arranged to modify the size of  
10 the dots.

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12 3. A system according to claim 1, arranged to modify the shape of  
13 the dots.

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15 4. A system according to claim 1, arranged to print dots having a  
16 first set of characteristics when the quantity of ink is determined to  
17 be above a predetermined threshold and to print dots having a  
18 second set of characteristics when the quantity of ink is determined  
19 to be below the predetermined threshold.

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21 5. A system according to claim 4, wherein the dots printed with  
22 the second set of characteristics are larger than the dots printed with  
23 the first set of characteristics.

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25 6. A system according to claim 5, wherein the dots printed with  
26 the first and second sets of characteristics have substantially the  
27 same shape.

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29 7. A system according to claim 5, wherein the dots printed with  
30 the first and second sets of characteristics have different shapes.

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1 8. A system according to claim 7, wherein the dots having the  
2 first set of characteristics are substantially "L" shaped.

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4 9. A system according to claim 7, wherein the dots having the  
5 second set of characteristics are substantially "T" shaped.

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7 10. A system according to claim 4, arranged to detect three or  
8 more ranges in the quantity of ink in the supply and is further  
9 arranged to print dots having a corresponding set of characteristics  
10 at each of the ranges.

11

12 11. A system according to claim 1, wherein each of the plurality of  
13 dots has a nominal position offset in one of a plurality of directions,  
14 such as above, below, to the left and to the right, from the  
15 intersection point of a virtual grid.

16

17 12. A system according to claim 1, wherein the modification of the  
18 one or more characteristics of the dots substantially does not alter  
19 the nominal position of each dot.

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21 13. A system according to claim 1, wherein the printer is a digital  
22 printer.

23

24 14. A system according to claim 13, wherein the printer is an inkjet  
25 printer, a LED printer, a LCD printers, or a liquid electrophotographic  
26 printers.

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28 15. A system according to claim 13 or claim 14, wherein the printer  
29 also functions as a photocopier.

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1 16. A system according to claim 13, wherein the printer has a  
2 resolution of approximately 600dpi.

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4 17. A system according to claim 1, wherein the dots are printed in  
5 IR absorbing ink.

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7 18. A system according to claim 1, adapted to print the location  
8 pattern without human-discernible content.

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10 19. A system according to claim 1, adapted to print the location  
11 pattern and human-discernible content on the same carrier.

12

13 20. A method of generating a location pattern comprising a  
14 plurality of dots, comprising the steps of:

15 receiving data relating to the degree of deterioration or wear  
16 associated with one or more elements of an ink supply; and,

17 selecting characteristics of the pattern dots in dependence  
18 upon the received data.

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20 21. A method according to claim 20, further comprising the step of  
21 requesting pattern information from a pattern database.

22

23 22. A method according to claim 20, further comprising the step of  
24 generating a print file comprising pattern area having dots with the  
25 selected characteristics.

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27 23. A method according to claim 22, further comprising the step of  
28 printing the print file on a printer associated with the ink supply.

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30 24. A method according to claim 22, wherein the data corresponds  
31 to the quantity of ink in the supply.

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2 25. A computer program or a printer driver comprising program  
3 code means for performing the method steps of any one of claims 20  
4 to 24 when the program is run on a computer and/or other processing  
5 means associated with suitable apparatus.

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7 26. A printer system comprising a printer and an ink supply, the  
8 printer arranged to print a location pattern comprising a plurality of  
9 dots adapted to be read by a pattern reader, the system being further  
10 arranged monitor a variable associated with the printing process and  
11 to modify the size of the dots in dependence upon the monitored  
12 variable.

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14 27. A system according to claim 26, wherein the monitored  
15 variable is the ambient temperature or humidity.

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17 28. A printer system comprising a printer and an ink supply, the  
18 printer arranged to print a location pattern comprising a plurality of  
19 dots adapted to be read by a pattern reader, the system being further  
20 arranged to modify one or more characteristics of the dots  
21 substantially in dependence upon a variable associated with the ink  
22 supply.

23

24 29. A system according to claim 28, wherein the variable provides  
25 an indication of the current level of deterioration of the ink supply or  
26 wear associated with one or more elements of the ink supply.

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28 30. A system according to claim 29, wherein the variable provides  
29 an indication of the cumulative degree of use of the ink supply.

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1 31. A system according to claim 29, wherein the variable is the  
2 quantity of ink in the supply.

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4 32. A location pattern system comprising a printer adapted to print  
5 location patterns made up of a plurality of dots and a pattern reader  
6 adapted to detect the printed dots, the system being adapted to print  
7 patterns having a dot size dependent upon a variable associated with  
8 an associated ink supply at substantially the time of printing, such  
9 that the dot detection response of the pattern reader is maintained  
10 substantially constant between patterns printed when the ink supply  
11 contained substantially different levels of ink.